

# Work Order ID 79739

**\*79739\***

Page 1

February-01-12 9:57:16 AM

Item ID: D205-634-041

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Item Name: Replacement Skidtube

Stop **\*NS2\***

Start Date: 01/02/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 17/02/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: M.C.J

Date: 12/02/10 Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D2580-041

(DEO) Rev.E

100

0.00

**\*100\***

DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy D205-634 bluefile & type labels per PPP D205-634-041 CHG005

N/A

110

0.00

**\*110\***

BENDING MACHINE - SKIDTUBES

CNC Bend 1

Memo

0.00

CNC Delta 100 Bender

1-Bend as per program D2580.C on CNC Bender and Folio 16

2-Cut tubes as per Dwg. D2580

3- scribe batch# in aft end of tube

1 x CF/ 12-3-14  
OK 12/03/14

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 79739****\*79739\***

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Item ID: D205-634-041

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**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Replacement Skidtube

Start Date: 01/02/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 17/02/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

120

0.00

**\*120\***

Skidtubes

Skidtubes

Memo

1- Deburr ends and remove bending marks

2- Prepare tube for welding as per QSI 004

0.00

130

QC5- Inspect part completeness to step on W/O

0.00

**\*130\***

QC


Quality Control

Memo

0.00



12-03-19

 12-3-19

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Revision ID:

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Item Name: Replacement Skidtube

Start Date: 01/02/2012 Start Qty: 1.00 **\*1\***

Cust Item ID:

Required Date: 17/02/2012 Req'd Qty: 1.00 **\*1\***

Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date:

Run Start **\*NR1\***

QC: Date: SPC (Y/N): Date:

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

140

0.00

**\*140\***

Skidtubes

Memo

0.00

Skidtubes

1-Weld step D2576 as per Dwg. D2580 and QSI004  
A/R Aluminum Rod *m20004 BE 12/3/20*

2-Grind welds on step as per Dwg D2580

3- Insert D4202-1 spacer, swage as per QSI002 and trim/ grind flush per QSI002 and dwg. Hold x-bolt with DT9701 Use tube expander 1/2 x 17G to start expansion and finish with 1/2 x 18G to achieve dwg dimention.

4-Drill holes for wearplates using DT 8217 & DT8937 Open holes to 19/64", adjust stopper not to hit web. Debur

6-Drill pilot holes for aft cap using DT 8215 Open holes to 0.208". Debur

7-Drill pilot holes for Tow ring using DT8091, open to .640" and Debur

*65 1203-20*

*20 1203-19*

150

QC10- Inspect visual per QSI004- ground welds

0.00

**\*150\***

QC

Memo

0.00

Quality Control

*S. 2/3/26*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Start Date: 01/02/2012 Start Qty: 1.00 **\*1\***

Cust Item ID:

Required Date: 17/02/2012 Req'd Qty: 1.00 **\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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160

QC5- Inspect part completeness to step on W/O

0.00

**\*160\***

QC

Memo

0.00

Quality Control

170

Pressure Wash per QSI005 4.3

0.00

**\*170\***

HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch and leave fwd cap out of solution.

180

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

**\*180\***

Powdercoat

Memo

0.00

Powder Coating

START TIME: 1620  
OVEN TEMPERATURE: 320°F  
FINISH TIME: 1650

m120222.

*Handwritten signature: NPM 12/03/26*

*Handwritten signature: 12/03/28*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Cust Item ID:

Required Date: 17/02/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

190

QC3- Inspect Part Finish

0.00

**\*190\***

QC

Memo

0.00

Quality Control

1 4 HL 12/03/28

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Start Date: 01/02/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 17/02/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

200

0.00

**\*200\***

HandFinish

Hand Finishing

Memo

0.00

1-Install inserts &amp; wearplates &amp; Gaskets as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates

✓ A/R Sikaflex-291 11120813Sikaflex expire date: 12108

✓ 2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580

3-Inspect for foreign object per QSI 024

✓ 4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step &amp; Aft Cap with

Sikaflex. Clean excess adhesive

✓ A/R Sikaflex-291 11120813Sikaflex expire date: 12108

✓ 5-Wing Walk as per Dwg D2580 and QSI 005 4.4

Batch: 111209591 of 24 01/02/12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Replacement Skidtube

Start Date: 01/02/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 17/02/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

210

QC5- Inspect part completeness to step on W/O

0.00

**\*210\***

QC

Memo

0.00

8/2/03/70

Quality Control

Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024

220

0.00

**\*220\***

Packaging

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPPD205-634-041

Location:

PPP Rev:

PPP 80934

230

QC21- Final Inspection - Work Order Release

0.00

**\*230\***

QC

Memo

0.00

Quality Control

6/24/08

12/4/10

ME

12-04-09

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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# Picklist Print

February-01-12 9:57:20 AM

Page 1

Work Order ID: 79739

\*79739\*

Parent Item: D205-634-041

\*D205-634-041\*

Parent Item Name: Replacement Skidtube

Start Date: 01/02/2012

Required Date: 17/02/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30  
 KJ IPP Rev P 10.02.19  
 per PAR09-043 EC verified by:DD  
 IPP Rev. O 06.02.28 Added paperwork EC  
 IPP Rev:P 07-07-09 SS Wearplates & Gaskets JLM IPP Rev:Q  
 10.12.01 as per chg003 DD verf:EC IPP REV:R 12.01.23 AS  
 PER ECN11-684 VERF:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D4202-1		Manufactured	No			140	Each	920.0000	20	20			
*D4202-1*									**	20		12-03-21	
Spacer													

Location	Loc Qty	Loc Code
LG	406	
77727	123	
77729	283	
LG002	514	
78806	514	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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February-01-12 9:57:20 AM

Work Order ID: 79739

\*79739\*

Parent Item: D205-634-041

\*D205-634-041\*

Parent Item Name: Replacement Skidtube

Start Date: 01/02/2012

Required Date: 17/02/2012

Start Qty: 1.00

Required Qty: 1.00

D2580-1

Manufactured No

110

Each

20.0000

1

1

\*D2580-1\*

205 Skidtube bent detail

\*\*

DC 12/03/14

Location

B80895

Loc Qty

Loc Code

①

LG

17

76570

2

77679

2

78240

2

78241

1

78531

2

79281

2

79282

2

79389

2

79390

2

ST

1

78701

1

ST046

2

78702

2

D2576-3

Manufactured No

140

Each

76.0000

1

1

\*D2576-3\*

Step (maching detail)

\*\*

DE 12/03/20

Location

Loc Qty

Loc Code

LG

76

70883

26

74136

50

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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**\*D205-634-041\***

Parent Item Name: Replacement Skidtube

Start Date: 01/02/2012

Required Date: 17/02/2012

Start Qty: 1.00

Required Qty: 1.00

D2855

Manufactured

No

200

Each

78.0000

1

1

**\*D2855\***

**\*\***

HL 12/03/28

Cap

Location

Loc Qty

Loc Code

FP002

78

65519

2

73347

30

75074

46

X1

AN3-5A

Purchased

No

200

Each

1,250.000

2

2

**\*AN3-5A\***

**\*\***

HL 12/03/28

Bolt

Location

Loc Qty

Loc Code

ST350

1250

115371

46

117423

206

118626

298

119355

200

120187

500

X2

AN960JD10L

NAS1149D0332J

Purchased

No

200

Each

0.0000

2

2

**\*AN960JD10L \*** ✕

**\*\***

M120644 (x2) HL 12/03/28

Washer

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Parent Item Name: Replacement Skidtube

Start Date: 01/02/2012

Required Date: 17/02/2012

Start Qty: 1.00

Required Qty: 1.00

ALS7-1032-130

Purchased

No

200

Each

2,472.000

50

50

\*AI S7-1032-130\*

\*\*

Insert

12/03/28

## Location

## Loc Qty

## Loc Code

ST280

328

117717

27

118966

22

119775

279

ST281

71

119794

71

ST282

2073

119530

73

120181

2000

x50

AN3C4A

Purchased

No

200

Each

3,149.000

50

50

\*AN3C4A\*

\*\*

BOLT

11/20/21 (x50) 12/03/28

## Location

## Loc Qty

## Loc Code

ST350

3149

117313

2

117688

5

117872

10

118112

16

118451

2

118838

4

119749

610

120187

2000

120423

500

AN960C10L

NAS1149C0332

Purchased

No

200

Each

0.0000

50

50

\*AN960C10I \*

\*\*

washer

11/20/21 (x50) 12/03/28

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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**\*79739\***

Parent Item: D205-634-041

**\*D205-634-041\***

Parent Item Name: Replacement Skidtube

Start Date: 01/02/2012

Required Date: 17/02/2012

Start Qty: 1.00

Required Qty: 1.00

D3566-13

Manufactured No

200

Each

58.0000

1

1

**\*D3566-13\***

Gasket

**\*\***

*xl 12/03/28*

Location

Loc Qty

Loc Code

FP002

58

*76947*

58

*xl*

D3566-5

Manufactured No

200

Each

33.0000

1

1

**\*D3566-5\***

Gasket

**\*\***

*380374 (x1) xl 12/03/28*

Location

Loc Qty

Loc Code

FP002

33

*76945*

33

D3566-1

Manufactured No

200

Each

34.0000

2

2

**\*D3566-1\***

Gasket

**\*\***

*381619 (x2) xl 12/03/28*

Location

Loc Qty

Loc Code

FP002

34

*68924*

2

*76942*

8

*77569*

24

D3564-11

Manufactured No

200

Each

15.0000

1

1

**\*D3564-11\***

Wearshoe

**\*\***

*377056 (x1) xl 12/03/28*

Location

Loc Qty

Loc Code

FP

11

*76268*

11

FP001

4

*77614*

4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

February-01-12 9:57:21 AM

Work Order ID: 79739

**\*79739\***

Parent Item: D205-634-041

**\*D205-634-041\***

Parent Item Name: Replacement Skidtube

Start Date: 01/02/2012

Required Date: 17/02/2012

Start Qty: 1.00

Required Qty: 1.00

D3564-13

Manufactured No

200 Each

45.0000

1

1

**\*D3564-13\***

Wearshoe

**\*\***

HL 12/03/28

Location

Loc Qty

Loc Code

FP001

24

71594

1

75045

8

77610

15

FP002

21

76946

21

D3564-9

Manufactured No

200 Each

17.0000

1

1

**\*D3564-9\***

Wearshoe

**\*\***

B78872 (x1) HL 12/03/28

Location

Loc Qty

Loc Code

FP001

17

67590

4

69943

1

77613

12

D3564-5

Manufactured No

200 Each

44.0000

1

1

**\*D3564-5\***

Wearshoe

**\*\***

B80343 (x1) HL 12/03/28

Location

Loc Qty

Loc Code

FG

2

34806

2

FP001

42

73330

1

76269

14

76944

15

77609

12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Page 7

February-01-12 9:57:21 AM

Work Order ID: 79739

**\*79739\***

Parent Item: D205-634-041

**\*D205-634-041\***

Parent Item Name: Replacement Skidtube

Start Date: 01/02/2012

Required Date: 17/02/2012

Start Qty: 1.00

Required Qty: 1.00

D2594-3

Manufactured No

200 Each

1,264.000

16

16

**\*D2594-3\***

O-Ring, 205 Skidtube

**\*\***

M 79755 (x16) 11/03/25

Location

Loc Qty

Loc Code

FP001

1264

65518

41

73490

223

79496

1000

D2594-1

Manufactured No

200 Each

530.0000

16

16

**\*D2594-1\***

Plug, 205 Skidtube

**\*\***

11/03/25

Location

Loc Qty

Loc Code

FP001

530

73401

30

74442

34

74869

184

76075

32

77035

250

B 79495

x10

X6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

LIST OF MATERIALS					
ITEM	QTY -041	QTY -045	QTY -047	PART NUMBER	DESCRIPTION
1	X			D2580-041	SKIDTUBE ASSEMBLY
2		X		D2580-045	SKIDTUBE ASSEMBLY
3			X	D2580-047	SKIDTUBE ASSEMBLY
4	1	1	1	D2500-1-190	EXTRUSION
5			16	D2570	BUSHING
6	1	1	1	D2576-3	STEP
7	20	24	25	D2579	SPACER
8	16	16	8	D2594-1	PLUG
9	16	16	8	D2594-3	O-RING
10	1	1	1	D2596	205 WEB
11	1	1	1	D2855	AFT CAP
12	1	1		D3564-5	WEARSHOE
13	1	1		D3564-9	WEARSHOE
14	1	1		D3564-11	WEARSHOE
15	1	1		D3564-13	WEARSHOE
16	2	2		D3566-1	GASKET
17	1	1		D3566-5	GASKET
18	1	1		D3566-13	GASKET
19			1	D4406-041	WEARPLATE ASSEMBLY
20			1	D4406-043	WEARPLATE ASSEMBLY
21	50	50		ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130	INSERT
22	50	50		AN3C4A	BOLT
23	2	2	2	AN3-5A	BOLT
24			8	AN4-45A	BOLT
25	50	50		NAS1149C0332R	WASHER (AN960C10L)
26	2	2	2	NAS1149D0332J	WASHER (AN960JD10L)
27			8	MS21042-4	NUT (OR MS21042L4)

# GENERAL NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB  
POWDER COAT ASSEMBLY (-041/-047) GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3  
POWDER COAT ASSEMBLY (-045) GREEN SANDEX (REF 4.3.5.8) PER DART QSI 005 4.3  
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4.
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D2580-041 = 34.5 lbs  
D2580-045 = 34.5 lbs  
D2580-047 = 37.7 lbs
- 8) WELDING PER DART QSI 004.
- 9) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 10) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 11) USE DART DRILL TEMPLATE DT8217 & DT8937 ONLY FOR D2580-041/-045 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTIONS B-B AND F-F (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND NAS1149C0332R WASHERS WITH SIKAFLEX-241/291.
- 12) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES FOR D2580-041/-045 AND 8 PLACES FOR D2580-047)
- 13) IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

DEO ATTACHED

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2011-08-29

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SERIALIZED BY  
WHY  
WORK CENTER  
NO - 79739 M.C.J  
12/02/01

E	ADD D2580-047 (ZN C4-7) AND D2580-7 (ZN B3-8); INCLUDED DEO D2580-D-1; REFORMATTED DRAWING TO CURRENT STANDARDS; DT8217 & DT8937 WAS TD2577-205 (ZN C4-1)	RF	11.06.21
D	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/ 9183	PH	07.04.05
C	REDRAWN, INCLUDED DEO 9094/ 9097	CP	98.08.26
B	AS MANUFACTURED	DS	96.12.02
A	NEW ISSUE	DS	96.09.16
REV.	DESCRIPTION	BY	DATE
DESIGN	#	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	10	DRAWING NO.	REV. E
MFG. APPR.	10	D2580	SHEET 1 OF 8
APPROVED	10	TITLE	SCALE
DE APPR.	10	205 SKIDTUBE ASSEMBLY	NTS
DATE	11.06.21	COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

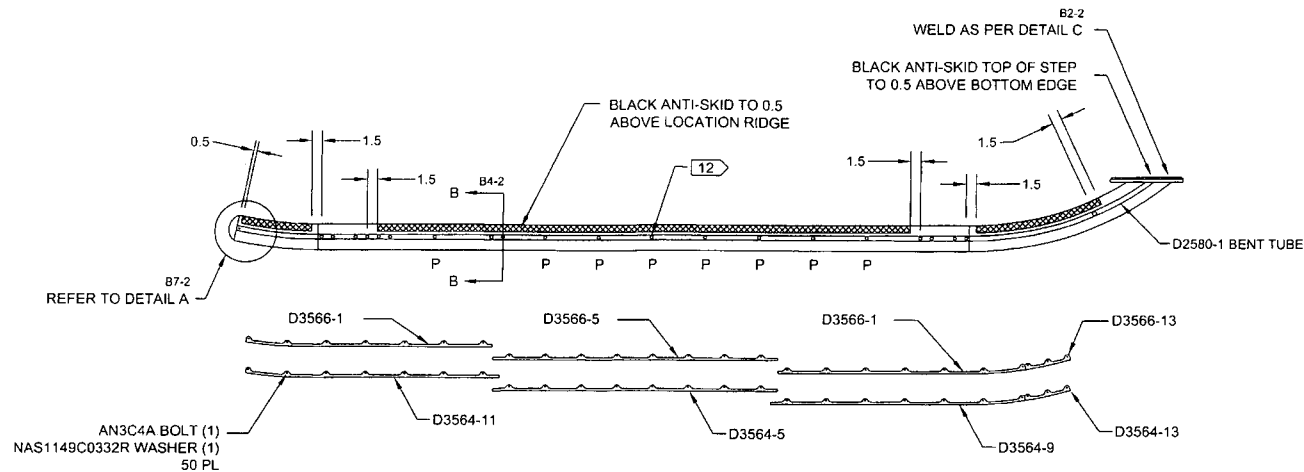
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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

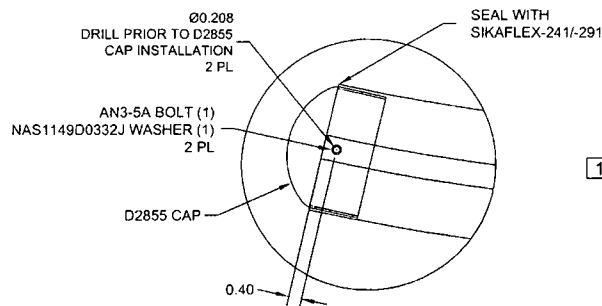
**NOTE:** Date & initial all entries

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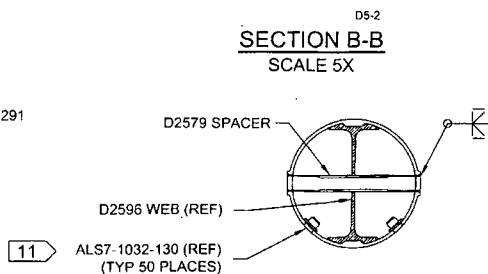


**D2580-041 ASSEMBLY DETAIL**

**DETAIL A**  
SCALE 5X

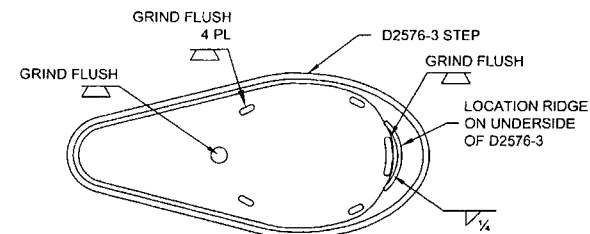


**SECTION B-B**  
SCALE 5X



- AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. CHAMFER HOLE 0.050 X 45°
  2. INSERT D2579 SPACER (20 PLACES)
  3. WELD INTO PLACE AND GRIND FLUSH
  4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP

**DETAIL C**  
SCALE 5X



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RELEASED  
2011-08-29

DESIGN	#	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	10	DRAWING NO.	REV. E
MFG. APPR.	10	D2580	SHEET 2 OF 8
APPROVED	10	TITLE	SCALE
DE APPR.	10	205 SKIDTUBE ASSEMBLY	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

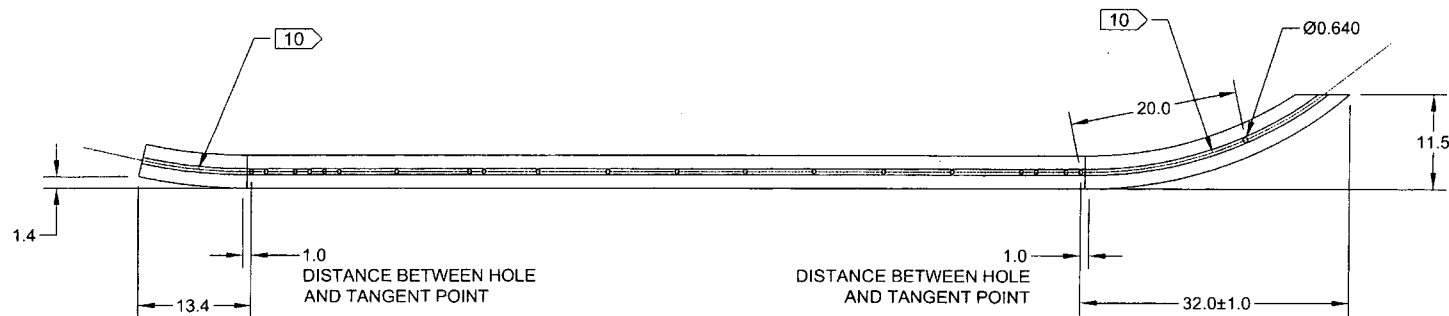
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



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D2580-1 BENT TUBE  
(MAKE FROM D2580-101 TUBE)

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2011-08-28  
JW

DESIGN	<del>RF</del>	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<del>RF</del>	DRAWING NO.	REV. E
MFG. APPR.	<del>RF</del>	D2580	SHEET 3 OF 8
APPROVED	<del>RF</del>	TITLE	SCALE
DE APPR.	<del>RF</del>	205 SKIDTUBE ASSEMBLY	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

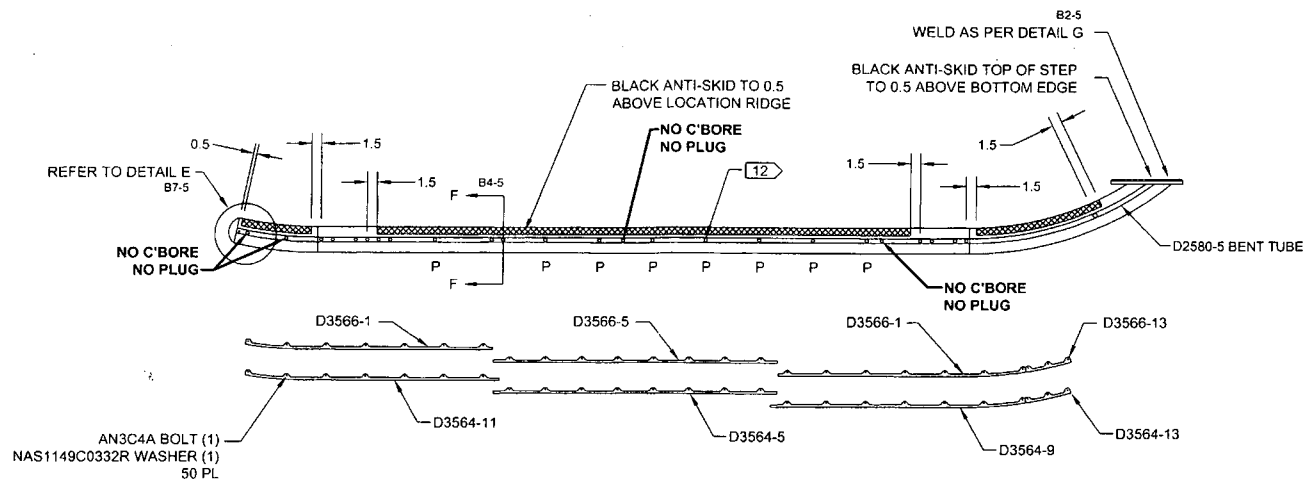
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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

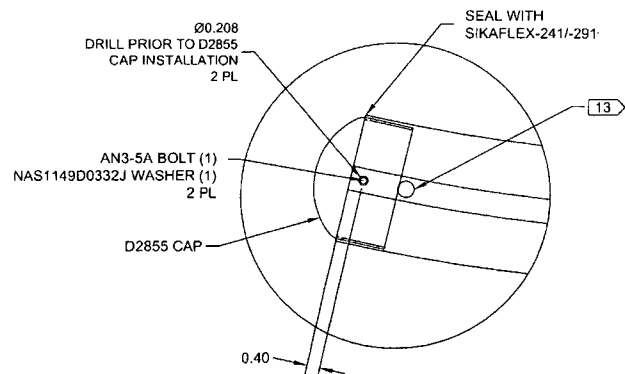
**NOTE:** Date & initial all entries

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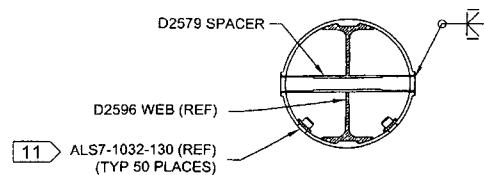


D2580-045 ASSEMBLY DETAIL

DETAIL E D7-5  
SCALE 5X

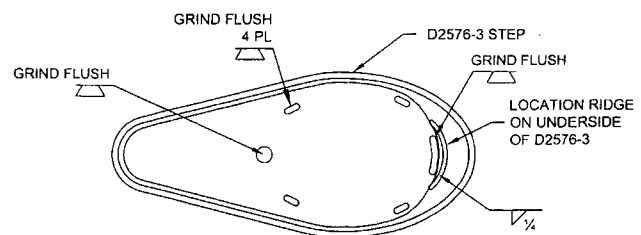


SECTION F-F D5-5  
SCALE 5X



- AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. CHAMFER HOLE 0.050 X 45°
  2. INSERT D2579 SPACER (24 PLACES)
  3. WELD INTO PLACE AND GRIND FLUSH
  4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP

DETAIL G D3-5  
SCALE 5X



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RELEASED  
2011-08-29

DESIGN	#	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	10	DRAWING NO.	REV. E
MFG APPR.	10	D2580	SHEET 4 OF 8
APPROVED	10	TITLE	SCALE
DE APPR.	10	205 SKIDTUBE ASSEMBLY	NTS
DATE	11.06.21	<small>COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

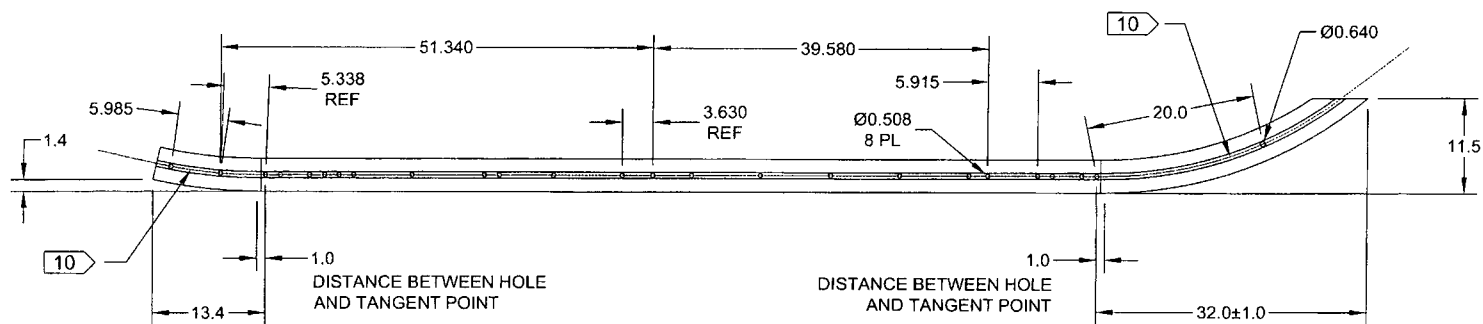
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

79739



D2580-5 BENT TUBE  
(MAKE FROM D2580-101 TUBE)

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2011-08-29

DESIGN	RF	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. E
MFG. APPR.	RF	D2580	SHEET 5 OF 8
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	205 SKIDTUBE ASSEMBLY	NTS
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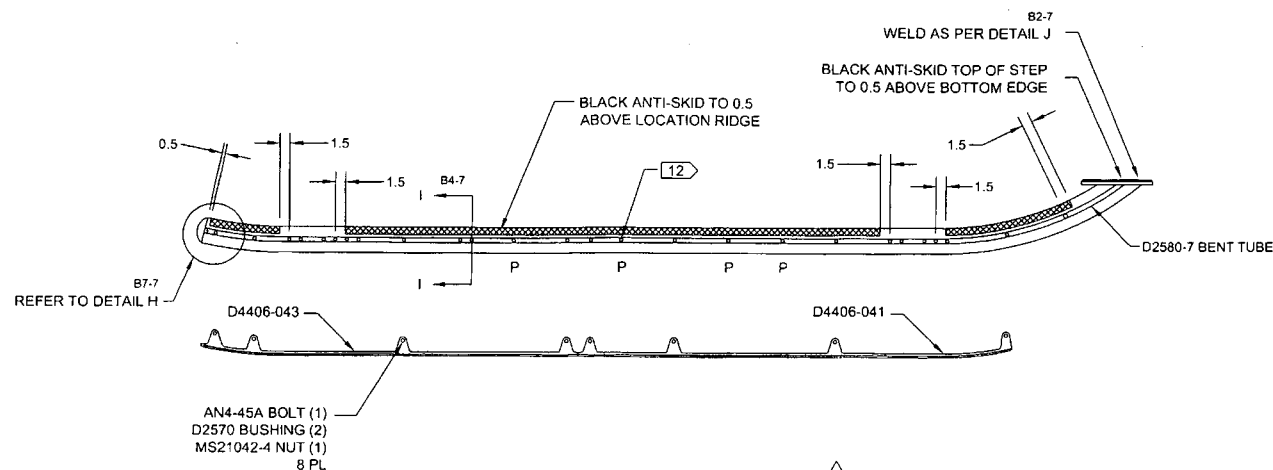
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

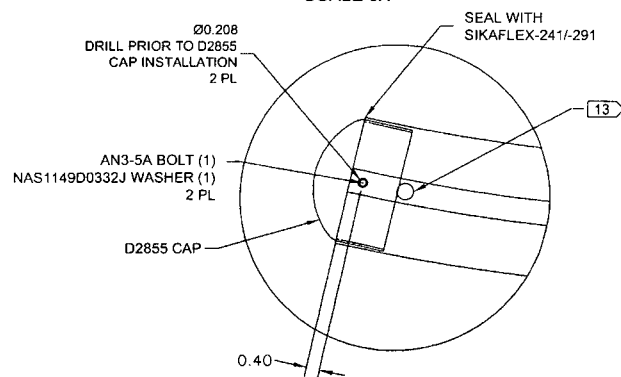
79739



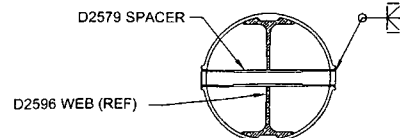
D2580-047 ASSEMBLY DETAIL E

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RELEASED  
2011-08-29

DETAIL H C6-7  
SCALE 5X

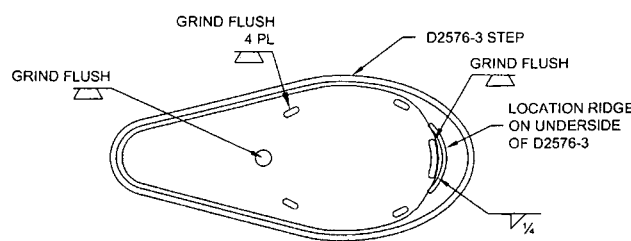


SECTION I-I D5-7  
SCALE 5X



- AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. CHAMFER HOLE 0.050 X 45°
  2. INSERT D2579 SPACER (25 PLACES)
  3. WELD INTO PLACE AND GRIND FLUSH
  4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP

DETAIL J D3-7  
SCALE 5X



DESIGN	#	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	10	DRAWING NO.	REV. E
MFG. APPR.	10	D2580	SHEET 6 OF 8
APPROVED	10	TITLE	SCALE
DE APPR.	10	205 SKIDTUBE ASSEMBLY	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

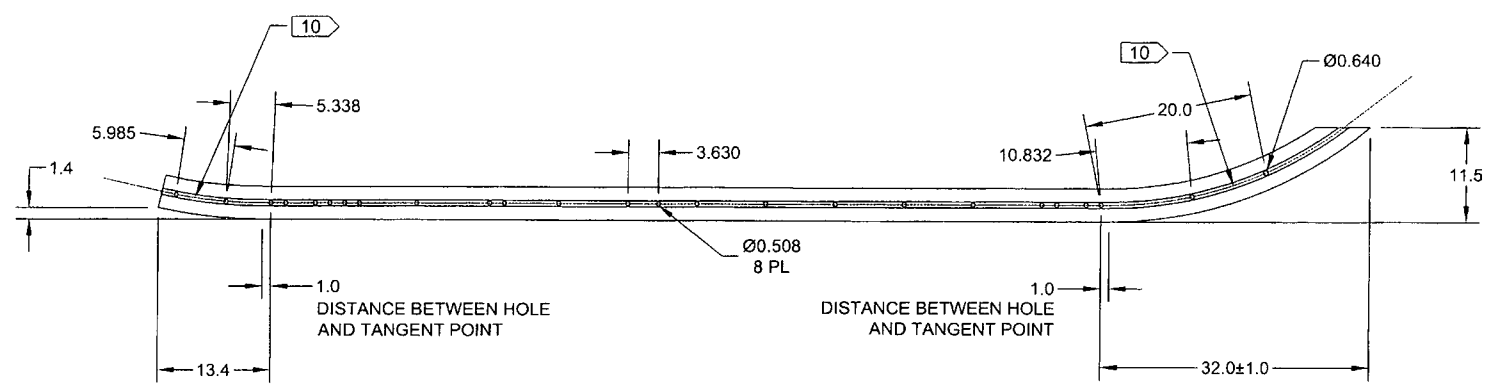
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



79739



D2580-7 BENT TUBE  
(MAKE FROM D2580-101 TUBE)



DEO ATTACHED

RELEASED  
2011-08-29  
AM

DESIGN	RF	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO. D2580	REV. E
MFG. APPR.	RF		SHEET 7 OF 8
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	205 SKIDTUBE ASSEMBLY	NTS
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W/O:		WORK ORDER CHANGES					
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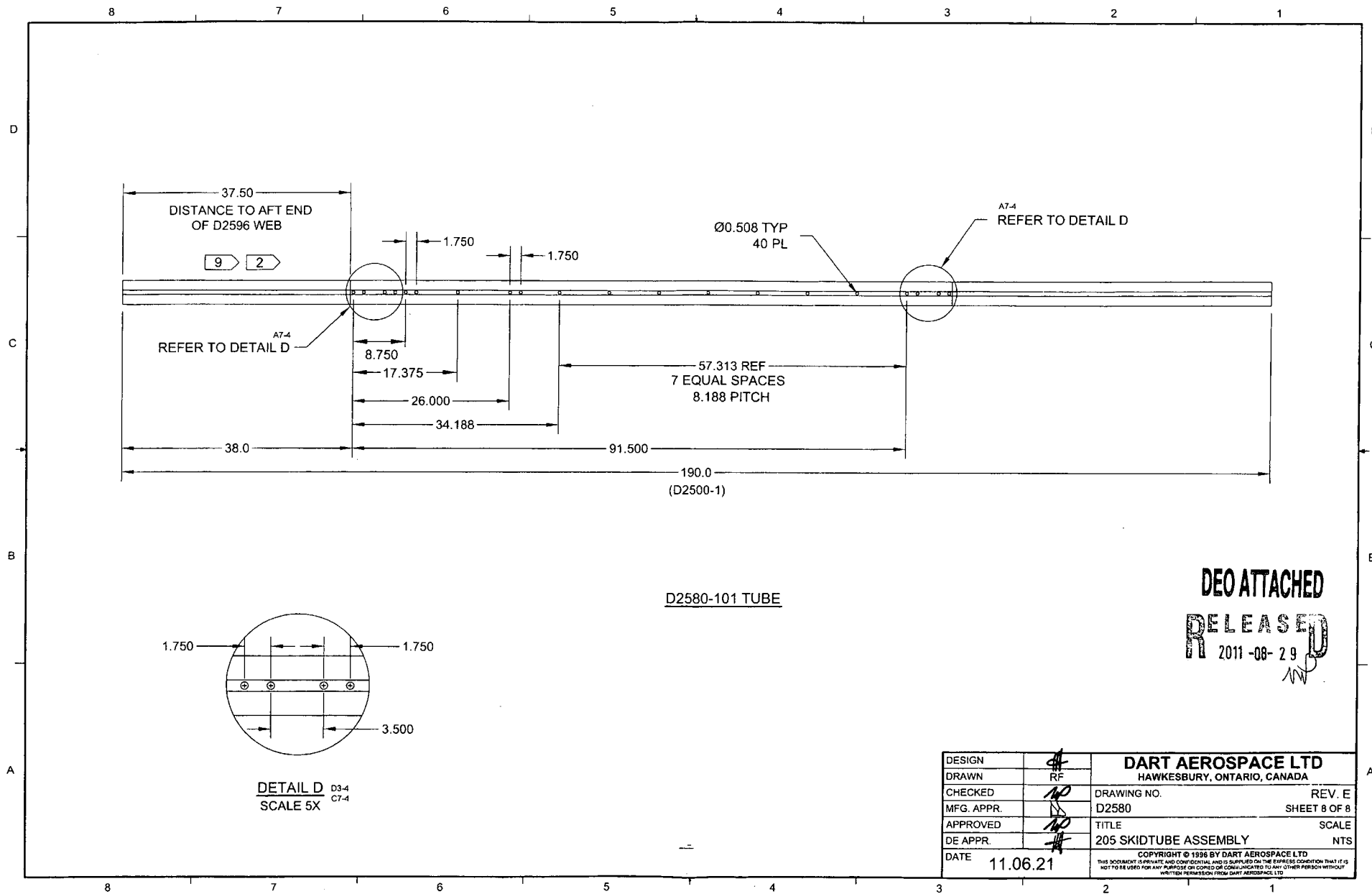
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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

79739



D2580-101 TUBE

DEO ATTACHED  
RELEASED  
2011-08-29

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. E
MFG. APPR.	RF	D2580	SHEET 8 OF 8
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	205 SKIDTUBE ASSEMBLY	NTS
DATE	11.06.21	<small>COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

79739

DRAWING NO. D2580	TITLE 205 SKIDTUBE ASSEMBLY	REV. E	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D2580-E-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>UP</i>	CHECKED <i>ASS</i>	MFG. APPR. <i>EC</i>	APPROVED <i>[Signature]</i>		DE APPR. <i>[Signature]</i>		
DATE 11.12.13	DATE 11.12.13	DATE 11.12.13	DATE 11.12.13		DATE 11.12.13		

**PURPOSE:**

CHANGE ALL C'BORED WELDED CROSSBOLT SPACERS TO SWAGED SPACERS

**CHANGE:**

PARTS LIST IS AMENDED AS FOLLOWS:

WAS

QTY	QTY	QTY	PART NUMBER	DESCRIPTION
-041	-045	-047		
20	24	25	D2579	CROSS BOLT SPACER

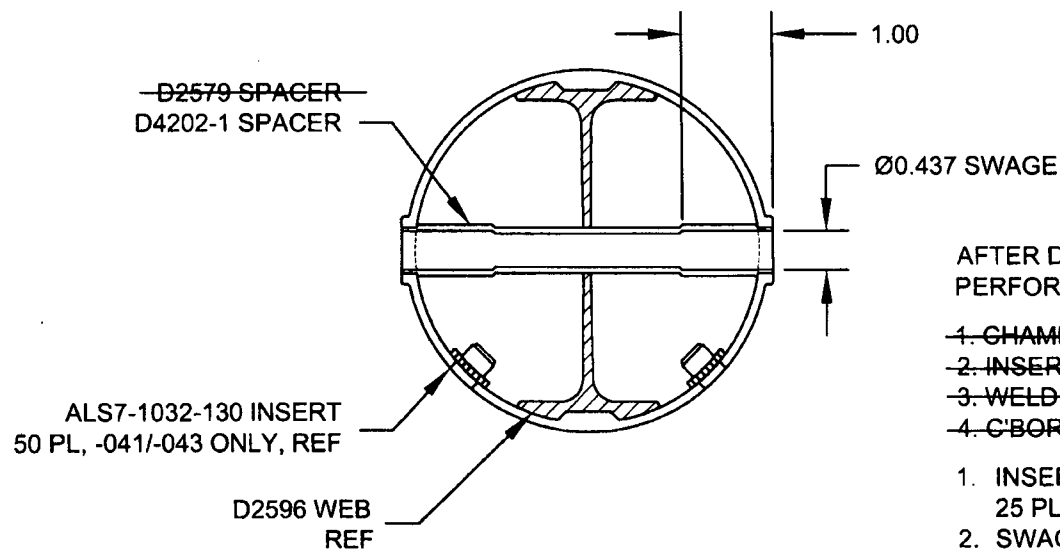
IS

	4		* D2579	CROSS BOLT SPACER
20	20	25	D4202-1	SPACER

SECTION B-B, SECTION F-F, & SECTION I-I ARE AMENDED AS FOLLOWS  
FOR ALL HOLES THAT WERE ORIGINALLY C'BORED:

**\* FOR -045 SKIDTUBE ONLY:**

WELD 4X D2579 SPACERS PER DWG  
IN LOCATIONS MARKED "NO C'BORE".  
REF SHEET 4 OF DWG.



**SECTION B-B, F-F, I-I**  
NOT TO SCALE

**RELEASED**  
2011-12-14 *[Signature]*

AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:

- ~~1. CHAMFER HOLE 0.050 X 45°~~
- ~~2. INSERT D2579 SPACER (20 PLACES)~~
- ~~3. WELD INTO PLACE AND GRIND FLUSH~~
- ~~4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP~~

- 1. INSERT D4202-1 SPACER, 20 PL (-041) OR 20 PL (-045) OR 25 PL (-047)
- 2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
- 3. TRIM / GRIND FLUSH PER QSI 002

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries